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Student Satisfaction with Online-Based Libraries with Methods Structural Equation Modelling

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***Abstract* — online libraries are a development of conventional libraries that can make it easier for readers to get information anywhere without having to come to where the library is located. The existence of this can be the right solution during the current pandemic. Completeness and continuous updates can be an important factor for achieving success in attracting user interest. Structural equation modeling (SEM) is a useful statistical test measure that is useful for being able to complete a study simultaneously through indicators that affect service quality and user satisfaction. The results in this study found that service quality had no effect on user satisfaction with a CR value of 1.246 and a p value of 0.213 while online libraries had an effect on user satisfaction with a CR value of 5.282 and a p value of 0.000.**

Keywords : **Student Satisfaction, Online Libraries, Structural Equation Modeling.**

I. INTRODUCTION

In 2020, the emergence of the corona virus became a pandemic in Indonesia and even in the world. Previously, the community carried out their activities normally, now they are limited. Work and learning are carried out at home to prevent transmission of the virus. Information technology is the most important thing for carrying out activities, both office work and studying, the pandemic has also affected the library as a medium for providing various information that is very useful for students, research students and workers who want to get the information and answers they want to get. Activities in the library have also experienced the impact of the pandemic which forced libraries to be able to provide complete information online.

To support the improvement of institutional quality and academic quality at Muhammadiyah University of Sidoarjo during a pandemic like this, the services and completeness of the information needed by students to obtain information must run well. The lack of complete online libraries is a problem, especially books that cannot be accessed online, only 195 of which are accessible from a total of 9,881 books with a percentage of 1.97% online books. Therefore these problems can be a barrier for students to get answers to the questions they are looking for. The addition of features such as borrowing books, complete theses and journals will attract students' desire to access the online library from home. Continuous updating of online libraries can be an important factor during the current pandemic to maintain or increase individual quality.

The application of the SEM (structural equation modeling) method is a statistical testing tool used by researchers to complete research simultaneously through indicators of the relationship between observed variables and latent variables or commonly called multivariate analysis which is used to analyze the complex relationship between variables.

With an explanation of these problems, improving the quality of services in the library is important for improving academic quality. Improving the quality of conventional or online libraries must always be improved to make it easier for anyone to get complete, easy and fast information so as to improve the quality of the nation's successors so they can compete internationally.

II. MANUSCRIPT PREPARATION

A. Library

The library functions as a medium for organizing education, research, preservation, information and recreation, all of which can help develop knowledge, educate and

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strengthen the country[1]. The existence of a library in one's life can certainly have a significant positive impact on people's lives. Various types of libraries play a role in increasing the capacity of individuals and communities. In the information age, the library is the preferred knowledge center, with various technical tools and access to various information sources, and can serve as a focal point of individual awareness for lifelong learning[2].

B. Online library

A digital library is an online repository of high quality digital object content generated and managed according to international standards. Furthermore, the available collections can be accessed or opened continuously which are supported by the services that users need when utilizing or needing information sources[3]. A new breakthrough in every library is the digital library (digital library), which is a testament to technological advances in the library. Information technology helps everything in the library, including its services, become easier so that it can be reached by many people, according to its purpose, namely a set of tools that facilitate the management of tasks related to data processing, information and communication[4].

C. Quality of service

Service quality is a dynamic condition related to service products, people, processes and the environment that can meet or exceed customer desires. Customer happiness and service quality are inextricably linked. Customers are more likely to create mutually beneficial long-term relationships with the company if the service is of high quality. Companies can better understand consumer expectations and goals when they have an emotional connection. As a result, businesses can increase customer satisfaction by maximizing valuable and enjoyable client experiences while avoiding or minimizing unsatisfactory or unpleasant experiences[5].

D. Customer satisfaction

Customer satisfaction is described as the level of one's feelings after comparing his feelings about performance (or results) with his expectations[6]. Customer satisfaction refers to how satisfied customers are after comparing the performance/results they feel with their expectations[7]. The difference between perceived performance and expectations determines the level of satisfaction. Customers will not be happy if performance falls short of expectations. Customers will be very happy if performance meets expectations[8].

E. Structural equation modeling

SEM is a method for finding, estimating, and assessing the forms of linear relationships between a set of observed variables and a small number of invisible variables[9].

According to[10], in general there are several steps of the SEM (structural equation modeling) method, which are as follows:

1. Improved Theoretical Model.
2. Improved Path Chart.
3. The equation is created using a path diagram.
4. Determine Estimation Techniques.
5. Identify potential problems and analyze them.
6. *Goodness Of Fit* standard assessment .
7. Model Interpretation and Modification.

III. MATHANDEQUATION

A. Conceptual framework

Figure 1 is a conceptual framework in describing this research using the SEM method.

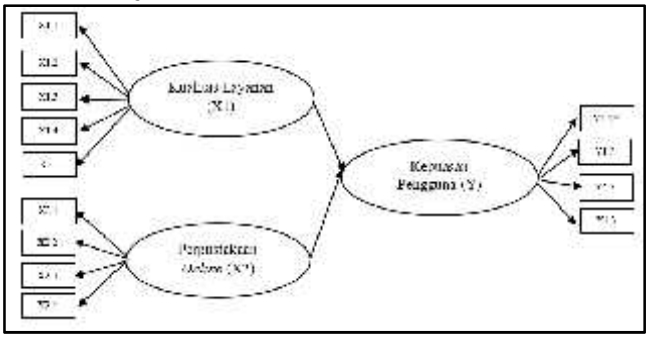

Figure 1: Research conceptual image

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B. Identify variables and indicators

In this study there are 2 (two) independent and dependent variables. The independent variables are service quality (X1) and online libraries (X2), while the dependent variable is user satisfaction (Y1). The following are the variables and indicators used in this study:

Table 1. Operational Research Variables

Variable	*Indicator*	*Indicator Definition*	*Code*	*Adaptation From*
Service Quality	Direct evidence (*Tangible*)	Describes users can more easily access theses, books , journals etc. In softfile form available in the *online library*	X1.1	Prasetyo (2021)
	Reliability _ _	Describes the user feels the conformity of expectations which includes the completeness of the *online library collection*	X1.2	
	Responsiveness _ _	The response speed of the call center in the online library when a problem occurs to a user.	X1.3	
	Guarantee (*Assurance*)	Describes users feel safe and satisfied when accessing the *online library* .	X1.4	
	Empathy (*Empathy*)	Describes how easy it is for users to access the *online library*	X1.5	
Online library (X2)	Need	Describes how much *online libraries are needed* for users to obtain information.	X2.1	Prasetyo (2021)
	Worthy	Describes how feasible the *online library website* can be accessed by users.	X2.2	
	Benefit	Describes how useful the existence of an *online library* is for users to meet the desired information needs.	X2.3	
	Interesting	Describes how attractive the design, features , and completeness of the contents of the *online library* are to users .	X2.4	
User satisfaction (Y)	Expectation	Describe the suitability of the *online library* with what is expected by users.	Y. 1	Prasetyo (2021)
	Recommendation	Describe a willingness to recommend the *online library* to friends and family	Y.2	
	Appearance	Describe how the display conditions of the *online library* for users.	Y.3	
	Information	Providing information quickly if there is a problem in the *online library*	Y.4	

C. Population and sample

In this study, the population was all UMSIDA students who accessed the library online. population is a generalized area consisting of things or people who meet the study criteria set by researchers in terms of quantity and certain attributes[11]. The population in this study is access to the online library of Muhammadiyah University of Sidoarjo.

As for determining the number of samples (n) used is referring to using the Bernoulli formula, which is stated in the formula as follows:

$$n = \frac{Z^2 p}{e^2}$$

Where: N = Number of Samples-Minimum
Z = Normal Distribution Table-Value
p = Proportion of the number of correct questionnaires
q = Proportion of Number of Questionnaires-Incorrect
e = Error Tolerance (10%)

In this study, a 95% confidence level was used which resulted in a value of Z = 1.96, an e (error tolerance) value of 10%, the proportion

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of correct questionnaires p = 50% (0.5), while the proportion of incorrect questionnaires q = 50% (0.5)[12]. Based on the Bernoulli formula above, the results of sample calculations that will be used by researchers are as follows:

$$n = \frac{(1{,}96)^2 \,.\, 0{,}5 \,.\, 0{,}5}{(0{,}1)^2}$$

$$n = \frac{3{,}84 \,.\, 0{,}25}{0{,}01}$$

$$n = \frac{0{,}9}{0{,}0}$$

$$n = 96$$

From the calculation results that have been obtained there are 96. So the number of samples that will be used in this study is 96 respondents.

D. Questionnaire preparation

The questionnaire was carried out by distributing questionnaires to students at the Muhammadiyah University of Sidoarjo which contained questions that contained the variables needed for the research. The Likert scale is used to assess attitudes, views, and perceptions of a person or group of people towards social problems. This social phenomenon has been identified by researchers as one of their special study variables, which is used from now on[11]. Each answer item using a Likert scale has various answers from very positive to very negative. Which is where the respondent must choose one of the answers that have been provided in a list of questions, with a questionnaire value that has been determined as follows:

a. Very dissatisfied = Score 1
b. Dissatisfied = Score 2
c. Neutral = Score 3
d. Satisfied = Score 4
e. Very satisfied = Score 5

After the preparation of the questionnaire was completed, the initial stage that was carried out was to spread 30 questionnaires first which served as a trial sample to find out whether the data was valid or not, after the data was valid and reliable then proceed to the data processing stage using SPSS software. If it is valid and reliable, then the next step is to distribute 66 questionnaires, then the next data processing uses the SEM method.

E. Data collection

Data collection is obtained through:

1. Interview

The use of this interview technique was carried out by librarians to look for variable indicators needed for distributing questionnaires.

2. Distribution of Questionnaires

The use of this questionnaire distribution technique is only aimed at students of Muhammadiyah University of Sidoarjo. With a minimum of 96 respondents obtained from sample calculations.

IV. UNITS

A. Validity test

This validity test functions to measure whether the questionnaire is valid or not. This process is carried out per attribute and aims to find out whether the existing attributes can be said to be valid, and if they are said to be invalid, the questionnaire must be distributed again until each attribute or R count value is greater than R table. It is declared valid if the questions posed adequately represent or reveal something to be measured or examined in the sense that the correlation coefficient R count is greater than the critical value obtained from r table. This validity test process uses SPSS software.

The results of testing the validity of the sample with N (number of samples) as many as 96 respondents and α 5% will obtain the value of d (degree of reedom) = n - 2 so that d is 94. Obtained an R table of 0.2006. Table 4.1 describes the results obtained from calculating the validity test of performance questions and consumer expectations using SPSS software.

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Table 2. Validity test results

Variable	*Attribute Code*	*R Count*	*R Table*	*Information*
Quality of Service (X1)	X1.1	0.719	0.2006	Valid
	X1.2	0.578	0.2006	Valid
	X1.3	0.593	0.2006	Valid
	X1.4	0.688	0.2006	Valid
	X1.5	0.513	0.2006	Valid
Online Library (X2)	X2.1	0.451	0.2006	Valid
	X2.2	0.654	0.2006	Valid
	X2.3	0.652	0.2006	Valid
	X2.4	0.468	0.2006	Valid
User Satisfaction (Y)	Y. 1	0.568	0.2006	Valid
	Y.2	0.619	0.2006	Valid
	Y.3	0.649	0.2006	Valid
	Y.4	0.654	0.2006	Valid

B. Reliability test

The reliability test on a research instrument is a test used to find out whether a questionnaire used in collecting research data can be said to be reliable or not. In the reliability test of this study was carried out using Cronbach's Alpha analysis. Where if a variable shows a Cronbach Alpha value > 0.6, it can be concluded that this variable can be said to be reliable or consistent in measuring. In this test also using SPSS software. Table 3 describes the results obtained from the calculation of the reliability test results of the questionnaire as many as 96 respondents with SPSS software.

Table 3. Reliability test results

Variable	*Number of indicators*	*Cronbach alpha*	*Information*
Quality of service (X1)	5	0.821	Reliable
Online Library (X2)	4	0.756	Reliable
User Satisfaction (Y)	4	0.807	Reliable

From the table above, the results of the reliability test on all variables are reliable. Because Cronbach alpha shows greater than 0.6. Therefore all indicators can be used for research.

C. Analysis of respondents' responses

From the analysis of respondents' responses, they can find out a descriptive description of the responses given by respondents to the questions given or questionnaires and an overview of the services provided by the online library through each indicator of each research variable that has been used. By knowing the average value of the interval calculation, it can facilitate the assessment[12]. The following is an interval search formula according to:

$$P = \frac{R}{Si \quad .K \qquad h}$$

Information :
Range : Highest Score – Lowest Score
Many Interval Classes : 5
From the explanation of the formula above, the result of the interval is as follows:
P = (5-1)/5=0.8
From these calculations it is determined that 0.8 is used for the interval of each category, therefore the categories can be determined as follows:
1 to 1.79 describes the very unfavorable category.
1.80 to 2.59 describes the category is not good.
2.60 to 3.39 describes the moderate category.
3.40 to 4.19 explain the good category.
4.20 to 5 describes the very good category.

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D. Analysis of respondents' responses to service quality

Analysis of respondents' responses to the service quality variable can provide information regarding the amount of data, frequency, total score and average score of respondents on each of the indicators as shown in table 4.

Table 4. Analysis of Service Quality Respondents Responses.

Indicator	*Scale*					*N*	*Score*	*Average*	*Category*
	1	2	3	4	5				
X1.1	3	13	31	41	8	96	326	3.40	Good
X1.2	3	17	32	34	10	96	319	3.32	Currently
X1.3	5	18	31	33	9	96	311	3.24	Currently
X1.4	2	6	33	43	12	96	345	3.59	Good
X1.5	0	7	30	44	15	96	355	3.70	Good
MEAN							1656	3.45	Good

Table 4 explains the results of the calculation that all respondents received a score of 3. Meanwhile, the lowest score was found in the X1.3 indicator (call canter response) which scored 3.24, which means that the response of the call center owned by the online library is still lacking for users, while the highest score found in the X1.5 indicator (ease of access) with a value of 3.70 which means the ease of accessing online libraries for users. As for the overall average value of the variable 3.45 with a very good category, so that the quality of services contained in the online library has met the expectations of the respondents.

E. Analysis of respondents' responses to online libraries

Analysis of respondents' responses to online library variables provides information about the amount of data, frequency, total and average scores of respondents for each indicator as shown in table 5.

Table 5. Analysis of Respondents' Responses to the Online Library.

Indicator	*Scale*					*N*	*Score*	*Average*	*Category*
	1	2	3	4	5				
X2.1	2	11	34	42	7	96	329	3.43	Good
X2.2	3	6	31	46	10	96	342	3.56	Good
X2.3	2	5	28	39	22	96	362	3.77	Good
X2.4	2	9	42	31	12	96	330	3.44	Good
MEAN							1363	3.55	Good

Table 5 explains that the average score is 3. And the lowest score is found in indicator X2.1 (online library needs) with a value of 3.43 which means the library is not really needed for some users, while the highest score is found in indicator X2.3 (benefits of online libraries) has a value of 3.77 which means that online libraries are beneficial for some users. For an overall average of 3.55 with a very good category, the online library at the Muhammadiyah University of Sidoarjo has fulfilled the expectations of the respondents.

F. Analysis of respondents' responses to user satisfaction

Analysis of respondents' responses to the user satisfaction variable provides information about the amount of data, frequency and average score of respondents on each indicator as shown in table 6.

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Table 6. Analysis of user satisfaction respondents.

Indicator	*Scale*					*N*	*Score*	*Average*	*Category*
	1	2	3	4	5				
Y1	2	9	33	42	10	96	337	3.51	Good
Y2	5	6	38	44	3	96	322	3.35	Currently
Y3	1	11	36	38	10	96	333	3.47	Good
Y4	3	12	40	36	5	96	316	3.29	Currently
MEAN							1308	3.41	Good

Table 6 gives the result that the average score is 3 of all indicators. And the lowest value is found in indicator Y4 (providing information) with a value of 3.29 where the provision of information about online libraries is still lacking for users, while the value is found in indicator Y1 (user expectations) with a value of 3.51 which means the online library has fulfilled expectations for users. For the overall average variable Y has a value of 3.41 with a very good category, so that user satisfaction that has been given the Muhammadiyah Sidoarjo university online library has met the expectations of respondents.

G. Test measurement models

In testing the SEM model, a CFA (Confirmatory Factor Analysis) test will first be carried out to find out the indicators used have sufficient ability to define latent or construct variables or test whether the model is fit or good with the data it has. Furthermore, a model fit test was carried out for CFA (Confirmatory Factor Analysis) to ensure that the model obtained was fit or good as seen from the results of the goodness of fit measure.

H. Confirmatory factor analysis test of service quality variable (X1)

The CFA (Confirmatory Factor Analysis) test for the service quality variable in this study is shown in Figure 2.

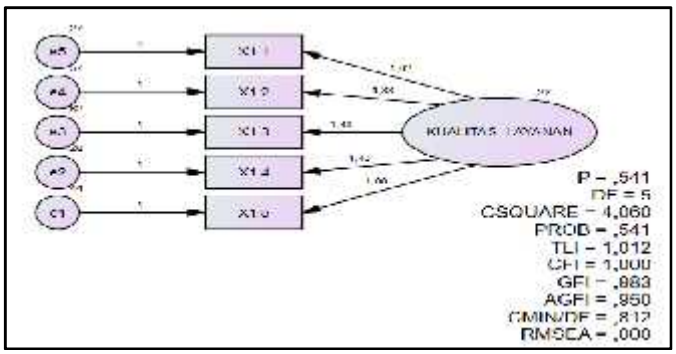

Figure 2. Service Quality Variable CFA Model

Based on Figure 2 which is the result of the CFA test with AMOS 22 software with maximum likelihood estimation, all criteria are good, shown in Appendix 3 Table 1. Where the chi-square value is 0.812 which is still below 2, meaning that the chi-square meets the cut-off value requirements . While the value of GFI, CFI, TLI, and AGFI is greater than 0.9, which means that they have fulfilled the requirements and are of good value or fit. RMSEA has a value of 0.000 which means that it has a value ranging from 0 to <0.08 with a good fit value, which has been explained[13]. And this model is declared fit and suitable for further discussion.

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Table 7 Standardized Regression Weights of Service Quality Variables.

			Estimates
X1.5	<---	QUALITY_SERVICES	,580
X1.4	<---	QUALITY_SERVICES	,788
X1.3	<---	QUALITY_SERVICES	,644
X1.2	<---	QUALITY_SERVICES	,642
X1.1	<---	QUALITY_SERVICES	,828

Furthermore, from table 7 it can be seen that the results of the loading factor located in the estimation column show the value of the indicator of the product quality variable, where the largest value is found in X1.1 with a value of 0.828. And the lowest value is 0.580 of X1.5. This shows that X1.1 is a direct evidence indicator that is part of forming a service quality model.

I. Confirmatory factor analysis test for online library variables (X2)

The CFA (Confirmatory Factor Analysis) test for online library variables in this study is shown in Figure 3.

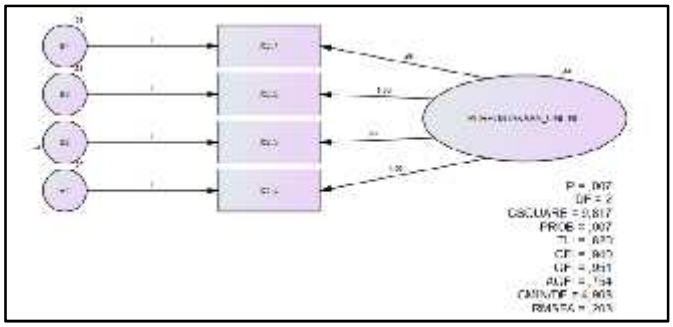

Figure 3. Online Library Variable CFA Model.

Figure 3 shows the results of the test using the AMOS 22 software with maximum likelihood estimation which results in not all criteria showing fit or good as shown in Appendix 3 table 2. Therefore it is necessary to modify the software suggested by the modified indices (MI) values. has the highest value by correlating (two arrows) between indicators which results in a decrease in the chi-square value of the modification indices (MI) of that number. Following are the results of model modifications which can be seen in Figure 4:

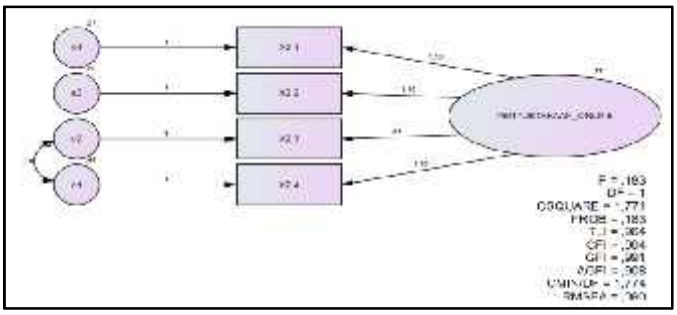

Figure 4. Modified Model of the Online Library Variable CFA.

Based on Figure 4 which is the result of the CFA test with AMOS 22 software with maximum likelihood estimation, all criteria are good, shown in Appendix 3 Table 4. Where the chi-square value is 1.774, which is still below 2, meaning that the chi-square meets the cut-off value requirements. . While the value of GFI, CFI, TLI, and AGFI is greater than 0.9, which means that they have fulfilled the requirements and are of good value or fit. RMSEA has a value of 0.090 which means that it has a value ranging from 0 to <0.08 which is good fit. And this model is declared fit and suitable for further discussion.

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Table 8. Standardized Regression Weights of Online Library Variables.

			Estimates
X2.4	<---	LIBRARY_ONLINE	,674
X2.3	<---	LIBRARY_ONLINE	,529
X2.2	<---	LIBRARY_ONLINE	,813
X2.1	<---	LIBRARY_ONLINE	,796

Furthermore, from table 8 it can be seen that the results of the loading factor located in the estimation column show the value of the indicator of the product quality variable, where the largest value is found in X2.1 with a value of 0.852. And the lowest value of X2.3 is 0.529. This shows that X2.1, namely the need indicator, shows part of the online library model builder.

J. Confirmatory factor analysis test of user satisfaction variable

The CFA (Confirmatory Factor Analysis) test for user satisfaction variables in this study is shown in Figure 5.

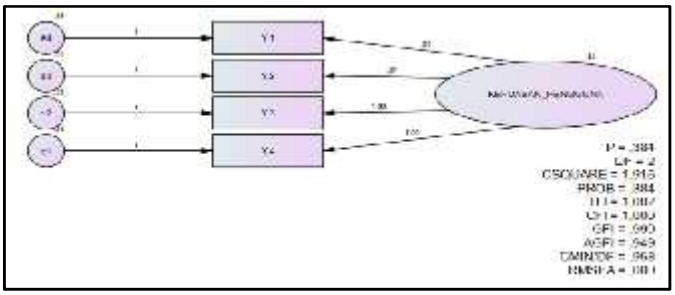

Figure 5. CFA Model of User Satisfaction Variables.

Based on Figure 5 which is the result of the CFA test with the AMOS 22 software with the maximum likelihood estimation, it can be seen that all criteria are good, shown in Appendix 3 Table 5. Where the chi-square value is 0.958 which is still below 2, meaning that the chi-square meets the cut-off value requirements . While the value of GFI, CFI, TLI, and AGFI is greater than 0.9, which means that they have fulfilled the requirements and are of good value or fit. RMSEA has a value of 0.000 which means that it has a value ranging from 0 to <0.08 which is good fit. And this model is declared fit and suitable for further discussion.

Table 9. Standardized Regression Weights Variable User Satisfaction.

			Estimates
Y4	<---	USER_SATISFACTION	,768
Y3	<---	USER_SATISFACTION	,765
Y2	<---	USER_SATISFACTION	,694
Y1	<---	USER_SATISFACTION	,633

Furthermore, from table 9 it can be seen that the results of the loading factor located in the estimation column show the value of the indicator of the product quality variable, where the largest value is found in Y4 with a value of 0.768. And the lowest value of Y1 is 0.633. This shows that Y4, namely the information indicator, shows part of the forming of the user satisfaction model.

K. Model structural test

The structural model test is a continuation of the stage after the measurement model test. In this test it is still the same, namely using maximum likelihood. The overall structural test explains how much the hypothesized exogenous variables in the equation are able to explain the endogenous variables. The test results can be seen in Figure 6:

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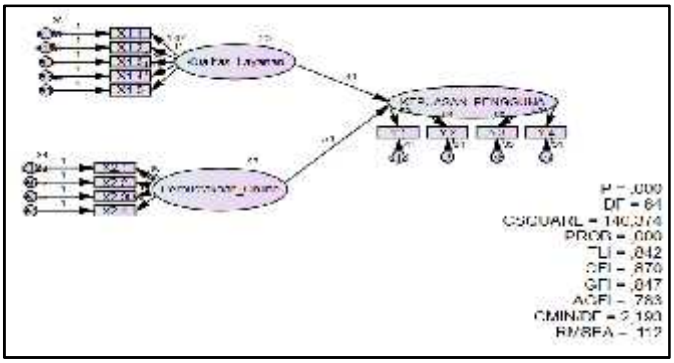

Figure 6. Structural Model

After making and testing the structural model, it can be seen in Figure 6 and Appendix 3 Table 6 that not all of them are in a fit or good condition, such as a p value that is less than 0.05 and the CFI, GFI, TLI and AGFI values are less than 0.9 which means where the value does not meet the criteria of fit. So it is necessary to make modifications to the model.

L. Model modification

The purpose of this modification is to reduce the chi-square value, where the value will get better if the value is smaller, which means it can be said to be fit. Modifications are made by repeating the estimation process by receiving recommendations for improvement from the AMOS 22 software which are found in the modification indices (MI) which have the greatest value which causes the improvement indicators to be correlated which will cause the chi-square value to fall by the modification indices (MI) numbers. The results of model modification can be seen in the following figure:

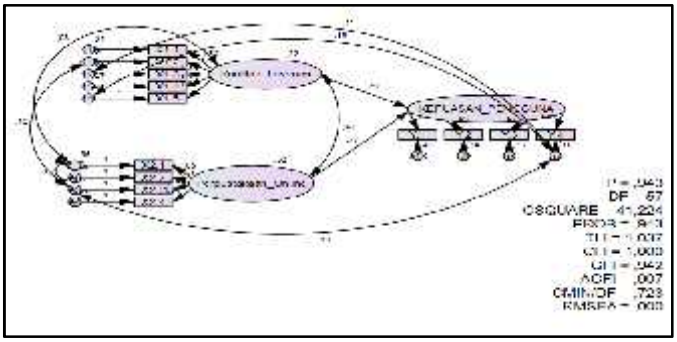

Figure 7. Modified Structural Model

In Figure 7 is a structural model that has been modified on suggestions or recommendations from the AMOS 22 software where the model does not have all the criteria indicating a fit model as seen in Appendix 3 table 10. That from the chi-square criterion is 0.723 it meets the cut-off requirements value that is less than 2, CFI and TLI values that exceed 0.9 and an RMSEA value of 0.000 which is less than 0.05 which means that this model is fit or can be stated as good.

M. Hypothesis test

For the next stage after the model has been declared fit or good, then the hypothesis testing stage is carried out with the aim of knowing the effect of the independent and dependent relationships. The results of the hypothesis test can be accepted or significant if the CR (Critical Ratio) if the value exceeds or equals 1.96 or the p-value <0.05[14]. The following are the results of the hypothesis test shown in table 10.

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Table 10. Hypothesis Test Results

hypothesis	*Connection*	*CR*	*P*	*Information*
H1	Service quality has an effect on user satisfaction	1,246	0.213	Not significant
H2	*Online* library , influence on user satisfaction	5,282	0.000	Significant

Based on the results of the hypothesis testing that has been done, it can be concluded that each hypothesis in this study is as follows:
1. Hypothesis 1: Service quality affects user satisfaction.

Based on table 10 the results of testing service quality on user satisfaction with the condition that the CR value is 1.246 which is less than 1.96 and the probability value (p) is 0.213 which is greater than 0.05 and it can be concluded that service quality is not effect on user satisfaction. In this case, it shows that the online library has provided services, namely information in the form of accessing contents such as books, theses or journals which are deemed satisfactory enough for users to access.
2. Hypothesis 2: Online libraries have an effect on user satisfaction.

According to table 10, the results of the online library hypothesis test have an effect on user satisfaction, which has a CR value of 5.282, which value is greater than 1.96 and a probability value (p) of 0.000 which is less than 0.05, it can be concluded that the library online effect on user satisfaction. From these results it is found that online libraries, in terms of appearance, security or otherwise will give an impression to users who will later be evaluated by the feelings of users who are used to decide whether the user is satisfied or not.

N. sem model analysis

In this study, the model obtained explains that not all variables have an influence, therefore the model obtained from research results like this is shown in Figure 8.

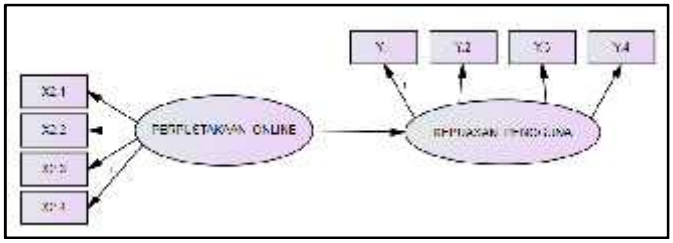

Figure 8. Final Research Model

Of the 2 variables that have been determined and have their respective indicators that affect the variable user satisfaction, only 1 (one) has an influence on the variable user satisfaction, as seen in table 10, namely the online library.

O. Loading factor

From the research that has been done, found results and there are several suggestions related to the variables of service quality, online libraries and user satisfaction obtained from the results of the estimation of the loading factor which has the lowest value in each variable, including the following.

1. The lowest loading factor in the service quality variable is found in indicator X1.5, namely ease of access. There are several factors that are felt to be lacking for access, it would be even better if it was equipped with more accurate and updated information. So that it can be easier to make adjustments to various new conditions in accordance with developments in information needs now and in the future[15].
2. In the Online Library variable that has the lowest loading factor value, X2.1 is the need for online libraries for users. Several factors are very influential for users to make online libraries a necessity, including by forcing lecturers to use online libraries by incorporating into the current

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curriculum the importance of online libraries in a tertiary institution, as well as the influence of social interaction that will lead to an idea. using an online library will be useful to support lecture activities and influence interest in using it to be able to convince users to access it[16]

V. CONCLUSION

1. The online library has an effect on user satisfaction which has a CR value of 5.282 which exceeds 1.96 and a probability value (p) of 0.000 which is less than 0.05. It can be concluded that online libraries have an effect on user satisfaction.
2. The lowest loading factor on the service quality variable is the X1.5 indicator, namely ease of access. Whereas the online library variable that has the lowest loading factor is found in the X2.1 indicator, namely the need for an online library

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